IN THE CLAIMS

1. (Currently amended) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

receiving the concurrently-transmitted data in the plurality of multiple-bit groups; and

after receiving the concurrently-transmitted data, realigning skew-caused misalignments between the groups;

wherein realigning skew-caused misalignments between the groups occurs after validating the received data and before further interpretation of the received data.

2. (Cancel)

3. (Original) The method of claim 1, further including controlling the skewing of the data in each group.

4. (Original) The method of claim 3, wherein controlling the skewing of the data in each group occurs independent of each other group.

5. (Original) The method of claim 1, further including transmitting, for each group, a clock signal used to synchronize the concurrently-transmitted data within each group.

6. (Original) The method of claim 1, further including transmitting a data-valid indicator and using the data-valid indicator to control the reception of the data in each group.

7. (Original) The method of claim 6, wherein transmitting the data-valid indicator is performed for each group of transmitted data.

8. (Original) The method of claim 7, further including coding the data into coded-data values before the data is concurrently transmitted in the plurality of multiple-bit groups and wherein the data-valid indicator is a unique coded-data value.

9. (Original) The method of claim 7, further including transmitting at least one special bit for each group, and wherein the data-valid indicator is transmitted using the at least one special bit.

10. (Original) The method of claim 1, for each group further including: transmitting a synchronization clock signal and a data-valid indicator, receiving the transmitted data by sampling the data at the synchronization clock signal, and using the data-valid indicator to control the reception of the data in the group.

11. (Original) The method of claim 10, for each group further including: determining that the data-valid indicator indicates that valid data has been received and, in response, storing the received data before realigning skew-caused misalignments between the groups.

12. (Original) The method of claim 10, wherein storing the received data for each group includes storing the received data in a single-group FIFO buffer dedicated to the group, and wherein realigning skew-caused misalignments between the groups includes providing a group-global FIFO for storing data output from the respective single-group FIFOs.

13. (Original) The method of claim 1, wherein for each group, data is carried by a plurality of data-carrying lines that are synchronized by a differential clock signal to tolerate any skew-caused misalignments between data concurrently transferred in the group, the skew-caused misalignments not exceeding one half clock period.

14. (Original) The method of claim 1, further including coding the data from an 8-bit value to a 6-bit coded-data value for each group before the data is concurrently transmitted.

15. (Cancel).

16. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

a receive circuit configured and arranged to receive the concurrently transmitted data in the plurality of multiple-bit groups; ~~and~~

a realignment circuit configured and arranged to realign skew-caused misalignments between the groups after receiving the concurrently-transmitted data; and

a sending module configured and arranged to concurrently transmit the data in the plurality of multiple-bit groups;

wherein realigning skew-caused misalignments between the groups occurs after validating the received data and before further interpretation of the received data.

17. (Cancel)

18. (Cancel)

19. (Original) The parallel data communication arrangement of claim 17, further including controlling the skewing of the data in each group.

20. (Original) The parallel data communication arrangement of claim 19, wherein controlling the skewing of the data in each group occurs independent of each other group.

21. (Original) The parallel data communication arrangement of claim 17, further including transmitting, for each group, a clock signal used to synchronize the concurrently-transmitted data within each group.

22. (Original) The parallel data communication arrangement of claim 17, further including transmitting a data-valid indicator and using the data-valid indicator to control the reception of the data in each group.

23. (Original) The parallel data communication arrangement of claim 22, wherein transmitting the data-valid indicator is performed for each group of transmitted data.

24. (Original) The parallel data communication arrangement of claim 23, further including coding the data into coded-data values before the data is concurrently transmitted in the plurality of multiple-bit groups and wherein the data-valid indicator is a unique coded-data value.

25. (Original) The parallel data communication arrangement of claim 23, further including transmitting at least one special bit for each group, and wherein the data-valid indicator is transmitted using the at least one special bit.

26. (Original) The parallel data communication arrangement of claim 17, for each group further including: transmitting a synchronization clock signal and a data-valid indicator, receiving the transmitted data by sampling the data at the synchronization clock signal, and using the data-valid indicator to control the reception of the data in the group.

27. (Original) The parallel data communication arrangement of claim 26, for each group further including: determining that the data-valid indicator indicates that valid data has been received and, in response, storing the received data before realigning skew-caused misalignments between the groups.

28. (Original) The parallel data communication arrangement of claim 26, wherein storing the received data for each group includes storing the received data in a single-group FIFO buffer dedicated to the group, and wherein realigning skew-caused misalignments between the groups includes providing a group-global FIFO for storing data output from the respective single-group FIFOs.

29. (Original) The parallel data communication arrangement of claim 17, wherein for each group, data is carried by a plurality of data-carrying lines that are synchronized by a differential clock signal to tolerate any skew-caused misalignments between data concurrently transferred in the group, the skew-caused misalignments not exceeding one half clock period.

30. (Original) The parallel data communication arrangement of claim 17, further including coding the data from an 8-bit value to a 6-bit coded-data value for each group before the data is concurrently transmitted.

31. (Original) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

in each of the plurality of multiple-bit groups, concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal;

using the data-valid indicator to control the reception of the data in the group; and

after using the data-valid indicator to control the reception of the data in the group, realigning skew-caused misalignments between the groups.

32. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

means for each of the plurality of multiple-bit groups, for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

means for receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal;

means for using the data-valid indicator to control the reception of the data in the group; and

after using the data-valid indicator to control the reception of the data in the group, means for realigning skew-caused misalignments between the groups means.

33. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

a first module having a transmission circuit for each of the plurality of multiple-bit groups, each transmission circuit for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

a second module for, each group, receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal, for using the data-valid indicator to control the reception of the data in the group, and after using the data-valid indicator to control the reception of the data in the group, for realigning skew-caused misalignments between the groups.

34. (Original) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

in each of the plurality of multiple-bit groups, concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

in each of the plurality of multiple-bit groups,

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal,

using the data-valid indicator to control the reception of the data in the group, and

after using the data-valid indicator to control the reception of the data in the group, storing the received data in a single-group FIFO buffer; and

realigning skew-caused misalignments between the groups including using a group-global FIFO buffer for storing data output from the respective single-group buffers and then interpreting the data in the group-global FIFO buffer.

35. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

means, in each of the plurality of multiple-bit groups, for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

means, in each of the plurality of multiple-bit groups, for

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal,

using the data-valid indicator to control the reception of the data in the group, and

after using the data-valid indicator to control the reception of the data in the group, storing the received data in a single-group FIFO buffer; and

means for realigning skew-caused misalignments between the groups including using a group-global FIFO buffer for storing data output from the respective single-group buffers and then interpreting the data in the group-global FIFO buffer.